

## Earth Venture Instrument - 4 Table of Updates

This table presents updates from the Earth Venture Instrument (EVI) - 3 solicitation that are expected to be found in the EVI-4 solicitation.

EVI-3 Page Reference	Released EVI-3 PEA P Text  <b>Blue highlighting indicates the specific text from EVI-3 that is being changed for EVI-4.</b>  <b>Red text refers to changes associated with the SALMON-2 AO.</b>	EVI-4 Likely Page Reference	EVI-4 PEA S Text Updates.  <b>Green highlighting indicates relatively minor changes from EVI-3 to EVI-4.</b>  <b>Yellow highlighting indicates more significant changes from EVI-3 to EVI-4.</b>  <b>Red text refers to changes associated with the SALMON-2 AO.</b>
p. P-2	Investigations that address NASA goals in other areas such as heliophysics, astrophysics, or planetary science are not solicited in this <b>solicitation</b> .	p. S-2	Investigations that address NASA goals in other areas such as heliophysics, astrophysics, or planetary science are not solicited in this <b>PEA</b> .
p. P-3	NASA issues this Program Element Appendix (PEA) as an appendix of the Second Stand Alone Missions of Opportunity Notice (SALMON-2) Announcement of Opportunity (AO) for the purpose of soliciting proposals for Mission of Opportunity (MO) investigations to be implemented through the Earth Venture Instrument (EVI) <b>portion</b> of the Earth System Science Pathfinder (ESSP) Program. All investigations proposed in response to this solicitation must support the goals and objectives of the ESSP Program and the EVI element (Section 2.1) and must be implemented by Principal Investigator (PI) led investigation teams (Section 5.4 of the SALMON-2 AO). Two types of investigations are solicited: Instrument Investigations and CubeSat Investigations.	p. S-3	NASA issues this Program Element Appendix (PEA) as an appendix of the Second Stand Alone Missions of Opportunity Notice (SALMON-2) Announcement of Opportunity (AO) for the purpose of soliciting proposals for Mission of Opportunity (MO) investigations to be implemented through the Earth Venture Instrument (EVI) <b>element</b> of the Earth System Science Pathfinder (ESSP) Program. All investigations proposed in response to this solicitation must support the goals and objectives of the ESSP Program and the EVI element (Section 2.1) and must be implemented by Principal Investigator (PI) led investigation teams (Section 5.4 of the SALMON-2 AO). Two types of investigations are solicited: Instrument Investigations and CubeSat Investigations.
P-8,9	(iv) preparing and delivering appropriate data analysis software, including required calibration data, analyzing the data, <b>publicly distributing all the proposed investigation data from the prime mission phase to the scientific community, archiving the data in a NASA-chosen Distributed Active Archive Center (DAAC), and reporting the results of the science investigation in the scientific literature.</b>	S-8	(iv) preparing and delivering appropriate data analysis software, including required calibration data, analyzing the data, <b>archiving all the proposed investigation data at a NASA-chosen Distributed Active Archive Center (DAAC) for public distribution to the scientific community,</b> and reporting the results of the science investigation in the scientific literature.
p. P-10	The PI-Managed Mission Cost Cap for an Earth Venture Instrument investigation depends on the instrument class as described in Section 4.5.5 of this PEA. For Class D instrument based investigations or for CubeSat based	p. S-10	The PI-Managed Mission Cost Cap for an Earth Venture Instrument investigation depends on the instrument class as described in Section 4.5.5 of this PEA. For Class D instrument based investigations or for CubeSat based investigations, the cost

	investigations, the cost cap is <b>\$31M</b> in Fiscal Year (FY) <b>2018</b> dollars. For Class C instrument based investigations, the cost cap is <b>\$97M</b> in FY <b>2018</b> dollars.		cap is <b>\$33M</b> in Fiscal Year (FY) <b>2020</b> dollars. For Class C instrument based investigations, the cost cap is <b>\$102M</b> in FY <b>2020</b> dollars.
p. P-11	Requirement P-8. The proposed PI-Managed Mission Cost shall be no more than <b>\$97M</b> in FY <b>2018</b> dollars for a Class C instrument based investigation. The PI-managed cost shall be no more than <b>\$31M</b> in FY <b>2018</b> dollars for any Class D instrument or any CubeSat based investigation. The PI-Managed Mission Cost for Instrument Investigations excludes the integration of the instrument to the selected platform and for CubeSat Investigations excludes the integration of the CubeSat to the selected launch vehicle; it also excludes launch services. All proposals shall include proposed science team, instrument personnel, and key management and engineering staff activity in Phase D. Proposals shall assume two years for Phase D.	p. S-11	Requirement S-8. The proposed PI-Managed Mission Cost shall be no more than <b>\$102M</b> in FY <b>2020</b> dollars for a Class C instrument based investigation. The PI-managed cost shall be no more than <b>\$33M</b> in FY <b>2020</b> dollars for any Class D instrument or any CubeSat based investigation. The PI-Managed Mission Cost for Instrument Investigations excludes the integration of the instrument to the selected platform and for CubeSat Investigations excludes the integration of the CubeSat to the selected launch vehicle; it also excludes launch services. All proposals shall include proposed science team, instrument personnel, and key management and engineering staff activity in Phase D. Proposals shall assume two years for Phase D.
p. P-12	NASA also requires proposals to include plans and planning budgets that estimate the minimum costs for the project if there is a gap between the delivery of the completed instrument (end of Phase C) and the start of integration of the instrument to the designated spacecraft (start of Phase D). These "gap planning" budgets should be on a per-year basis up to a maximum of four years. The costs for both of these planning budgets are outside of the PI-Managed Mission Cost.	p. S-11	NASA also requires proposals to include plans and planning budgets that estimate the minimum costs for the project if there is a gap between the delivery of the completed instrument (end of Phase C) and the start of integration of the instrument to the designated spacecraft (start of Phase D). <b>Instrument and essential ground processing/algorithm/science development activities must not be planned during this gap as the instrument must be completed for delivery; only instrument maintenance activities such as storage and periodic monitoring must be planned.</b> These "gap planning" budgets should be on a per-year basis up to a maximum of four years. The costs for both of these planning budgets are outside of the PI-Managed Mission Cost.
p. P-13	NASA also requires proposals to include plans and planning budgets that estimate the minimum costs for the project if there is a gap between the delivery of the completed CubeSat(s) (part of Phase D) and the start of integration of the CubeSat(s) to the designated launch vehicle (part of Phase D). These "gap planning" budgets should be on a per-year basis up to a maximum of two years. The costs for both of these planning budgets are outside of the PI-Managed Mission Cost.	p. S-13	NASA also requires proposals to include plans and planning budgets that estimate the minimum costs for the project if there is a gap between the delivery of the completed CubeSat(s) (part of Phase D) and the start of integration of the CubeSat(s) to the designated launch vehicle (part of Phase D). <b>CubeSat(s) and essential ground processing/algorithm/science development activities must not be planned during this gap as the CubeSat(s) must be completed for delivery; only maintenance activities such as storage and periodic monitoring must be planned.</b> These "gap planning" budgets should be on a per-year basis up to a maximum of two years. The costs for both of these planning budgets are outside of the PI-Managed Mission Cost.
p. P-15	Estimated NASA Center Management and Operations (CM&O) overhead costs must also be included within the	p. S-15	Estimated NASA Center Management and Operations (CM&O) overhead costs must also be included within the cost cap, to enable

	cost cap, to enable a level playing field for all proposers. Per Headquarters policy guidance signed in June 2010 by the Associate Administrator, Mission Support Directorate and by the Agency Chief Financial Officer, all Centers shall use an identical CM&O burden rate of \$47K (FY 2018) per "equivalent head." Per NASA policy, this rate must be applied as a "cost per equivalent head" to all Civil Service Full Time Equivalents (FTEs) plus on/near site contractor Work Year Equivalents (WYEs) associated with the proposal. The estimated FTEs and WYEs per fiscal year, and the resulting CM&O burden, must be identified in a separate table within the budget justification section of the proposal.		a level playing field for all proposers. Per Headquarters policy guidance signed in June 2010 by the Associate Administrator, Mission Support Directorate and by the Agency Chief Financial Officer, all Centers shall use an identical CM&O burden rate of \$45K (FY 2017) per "equivalent head." For years after FY2017, this number must be inflated. Per Agency policy, this rate must be applied as a "cost per equivalent head" to all Civil Service Full Time Equivalents (FTEs) plus on/near site contractor Work Year Equivalents (WYEs) associated with the proposal. The estimated FTEs and WYEs per fiscal year, and the resulting CM&O burden, must be identified in a separate table within the budget justification section of the proposal.																																																																																										
p. P-15	<p><b>Table 3:</b> Cost Elements for NASA Center Budget Proposals in response to SMD AOs</p> <table><tr><th></th><th>Identify in proposal</th><th>Include in PI-Managed Mission Cost</th><th>Funding source</th><th>Comments</th></tr><tr><td></td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>Includes salaries and benefits</td></tr><tr><td></td><td>Yes</td><td>Yes</td><td>SMD Program</td><td></td></tr><tr><td></td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>Includes procurement identified by flight NASA N2 budget category</td></tr><tr><td></td><td>Yes</td><td>Yes</td><td>CASP</td><td>Applied to NASA program including Center on-site contractors</td></tr><tr><td></td><td>No</td><td>No</td><td>CASP</td><td></td></tr><tr><td></td><td>Yes</td><td>No</td><td>Identify</td><td>Must be non-SMD</td></tr><tr><td>g</td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>If NASA funding is the non-NASA Federal agency</td></tr><tr><td></td><td>Yes</td><td>No</td><td>Identify</td><td>Includes all non-NASA contributions</td></tr></table>		Identify in proposal	Include in PI-Managed Mission Cost	Funding source	Comments		Yes	Yes	SMD Program	Includes salaries and benefits		Yes	Yes	SMD Program			Yes	Yes	SMD Program	Includes procurement identified by flight NASA N2 budget category		Yes	Yes	CASP	Applied to NASA program including Center on-site contractors		No	No	CASP			Yes	No	Identify	Must be non-SMD	g	Yes	Yes	SMD Program	If NASA funding is the non-NASA Federal agency		Yes	No	Identify	Includes all non-NASA contributions	p. S-15	<p><b>Table 3:</b> Cost Elements for NASA Center Budget Proposals in response to SMD AOs</p> <table><tr><th></th><th>Identify in proposal</th><th>Include in PI-Managed Mission Cost</th><th>Funding source</th><th>Comments</th></tr><tr><td>or</td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>Includes salaries and benefits</td></tr><tr><td>vel</td><td>Yes</td><td>Yes</td><td>SMD Program</td><td></td></tr><tr><td>ents</td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>Includes procurement identified by flight NASA N2 budget category</td></tr><tr><td></td><td>Yes</td><td>Yes</td><td>CASP</td><td>Applied to NASA program including Center on-site contractors</td></tr><tr><td></td><td>No</td><td>No</td><td>CASP</td><td>Includes NASA program independent technical</td></tr><tr><td>ed</td><td>Yes</td><td>No</td><td>Identify</td><td>Must be non-SMD</td></tr><tr><td>ral ding</td><td>Yes</td><td>Yes</td><td>SMD Program</td><td>If NASA funding is the non-NASA Federal agency</td></tr><tr><td></td><td>Yes</td><td>No</td><td>Identify</td><td>Includes all non-NASA contributions</td></tr></table>		Identify in proposal	Include in PI-Managed Mission Cost	Funding source	Comments	or	Yes	Yes	SMD Program	Includes salaries and benefits	vel	Yes	Yes	SMD Program		ents	Yes	Yes	SMD Program	Includes procurement identified by flight NASA N2 budget category		Yes	Yes	CASP	Applied to NASA program including Center on-site contractors		No	No	CASP	Includes NASA program independent technical	ed	Yes	No	Identify	Must be non-SMD	ral ding	Yes	Yes	SMD Program	If NASA funding is the non-NASA Federal agency		Yes	No	Identify	Includes all non-NASA contributions
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p. P-16	Each selected Class C instrument investigation under this EVI solicitation will be expected to deliver an instrument that can be integrated onto a NASA-determined platform by <b>March 31, 2021</b> . Nominally, the selected investigation(s) development Phases A through C will span the years of <b>FY 2016-FY 2021</b> . Proposals that include a more rapid instrument development timelines may be selected, provided the required budget phasing can be accommodated by NASA.	p. S-16	Each selected Class C instrument investigation under this EVI solicitation will be expected to deliver an instrument that can be integrated onto a NASA-determined platform by <b>August 31, 2022</b> . Nominally, the selected investigation(s) development Phases A through C will span the years of <b>FY 2017-FY 2022</b> . Proposals that include a more rapid instrument development timelines may be selected, provided the required budget phasing can be accommodated by NASA.
p. P-16	Each selected Class D instrument or CubeSat investigation under this EVI solicitation will be expected to deliver an instrument that can be integrated onto a NASA-determined platform and/or a CubeSat(s) that can be integrated to a NASA-determined launch vehicle by <b>March 31, 2020</b> . Nominally, the selected investigation(s) development Phases A through C (or into Phase D for CubeSats) will span the years of <b>FY 2016-FY 2020</b> . Proposals that include more rapid development timelines may be selected, provided the required budget phasing can be accommodated by NASA.	p. S-16	Each selected Class D instrument or CubeSat investigation under this EVI solicitation will be expected to deliver an instrument that can be integrated onto a NASA-determined platform and/or a CubeSat(s) that can be integrated to a NASA-determined launch vehicle by <b>August 31, 2021</b> . Nominally, the selected investigation(s) development Phases A through C (or into Phase D for CubeSats) will span the years of <b>FY 2017-FY 2021</b> . Proposals that include more rapid development timelines may be selected, provided the required budget phasing can be accommodated by NASA.
p. P-16	<u>Requirement P-17.</u> For Class C instrument investigations, proposals shall include a development schedule that delivers an instrument for integration onto the selected platform no later than <b>March 31, 2021</b> . For Class D instrument or CubeSat investigations, proposals shall include a development schedule that delivers an instrument for integration onto the selected platform and/or a CubeSat(s) that can be integrated to a launch vehicle no later than <b>March 31, 2020</b> .	p. S-16	<u>Requirement S-17.</u> For Class C instrument investigations, proposals shall include a development schedule that delivers an instrument for integration onto the selected platform no later than <b>August 31, 2022</b> . For Class D instrument or CubeSat investigations, proposals shall include a development schedule that delivers an instrument for integration onto the selected platform and/or a CubeSat(s) that can be integrated to a launch vehicle no later than <b>August 31, 2021</b> .
p. P-18	Compared with other candidate platforms, the International Space Station (ISS) may be able to accommodate instruments with higher requirements for mass, volume/dimensions, power, and thermal control. Proposers should state whether the ISS is a potential platform for their instrument and identify the tradeoffs of using the ISS orbit vs. other orbits. Proposers that identify ISS as a potential platform must maintain flexibility to be accommodated in other LEO platforms. Even though NASA has current plans to support ISS operations through 2024, any instrument investigation that is appropriate for the ISS should describe an adequate timeline of development and operation for the proposed investigation, regardless of whether it is completed by the end of 2024. Differences between the investigation's	p. S-18	Compared with other candidate platforms, the International Space Station (ISS) may be able to accommodate instruments with higher requirements for mass, volume/dimensions, power, and thermal control. Proposers should state whether the ISS is a potential platform for their instrument and identify the tradeoffs of using the ISS orbit vs. other orbits. <b>Proposers that identify ISS as a potential platform must maintain flexibility to be accommodated on other platforms.</b> Even though NASA has current plans to support ISS operations through 2024, any instrument investigation that is appropriate for the ISS should describe an adequate timeline of development and operation for the proposed investigation, regardless of whether it is completed by the end of 2024. Differences between the investigation's timeline and NASA's plans for future ISS operations will be factored into the proposal's

	<p>timeline and NASA's plans for future ISS operations will be factored into the proposal's risk assessment for selection.</p>		<p>risk assessment for selection.</p>
P-18	<p><b>4.5.3 CubeSat Investigations</b></p> <p>CubeSat proposals are recommended to comply with Cal Poly CubeSat Developer's specifications, found at <a href="http://cubesat.calpoly.edu/index.php/documents/developers">http://cubesat.calpoly.edu/index.php/documents/developers</a>. Concepts that do not comply with the Cal Poly CubeSat and Poly Picosat Orbital Deployer (P-POD) standards should clearly describe how their designs are packaged and deployed. NASA Launch Services Program has issued a <i>Program Level Dispenser and CubeSat Requirements Document</i> with requirements for CubeSats sized up to 6U (2U x 3U). All proposals for CubeSats sized up to 6U shall be compliant with these requirements. Both of these documents can also be found in the EVI-3 Library. No CubeSat form factors larger than 6U will be considered under the present call. Qualifying CubeSat form factors (size) include 1U, 1.5U, 2U, 3U and 6U with a mass not to exceed 1.33 kg per U.</p> <p>Requirement P-20. All CubeSat proposals shall be compliant with the requirements in the NASA Launch Services Program <i>Program Level Dispenser and CubeSat Requirements Document</i>. No CubeSat form factors larger than 6U will be considered under the present call. Qualifying CubeSat form factors (size) include 1U, 1.5U, 2U, 3U and 6U with a mass not to exceed 1.33 kg per U.</p>	p. S-18	<p><b>4.5.3 CubeSat Investigations</b></p> <p>CubeSat proposals are recommended to comply with the Cal Poly CubeSat Design Specification, found at <a href="http://www.cubesat.org/resources">http://www.cubesat.org/resources</a>. NASA's Launch Services Program has issued a <i>Program Level Dispenser and CubeSat Requirements Document</i> (found in the EVI-4 Library) with standard requirements for launching CubeSats with form factors up to 6U and qualifying form factors of 1U, 1.5U, 2U, 3U and 6U.</p> <p>Concepts that do not comply with these standards should clearly describe how their designs are packaged and deployed, but with the understanding that CubeSat form factors larger than 6U will not be considered.</p> <p>Requirement S-20. All CubeSat investigations proposing compliance with the requirements in the NASA Launch Services Program <i>Program Level Dispenser and CubeSat Requirements Document</i> shall propose CubeSat form factors (size) no larger than 6U, with qualifying form factors of 1U, 1.5U, 2U, 3U and 6U. Concepts that do not comply with these standards should clearly describe how their designs are packaged and deployed. CubeSat form factors larger than 6U will not be considered.</p>
p. P-20	<p>By NASA policy, all science data returned from NASA missions are made available immediately in the public domain. Following a post-flight checkout period, all data will be made available to the user community. There shall be no period of exclusive access. The principal investigator shall propose and justify the data product latency period for standard products listed in the proposal, based primarily on the time required to produce, quality-check, and validate the products. Barring exceptional circumstances, data product latency may not exceed six months.</p>	p. S-20	<p>By NASA policy, all science data returned from NASA missions are made available immediately in the public domain. There shall be no period of exclusive access. The principal investigator shall propose and justify the data product latency period for standard products listed in the proposal, based primarily on the time required to produce, quality-check, and validate the products. Barring exceptional circumstances, data product latency may not exceed six months.</p>
p. P-20	<p>During Phase A, NASA will assign a data center, e.g., one of the Earth Observing System Data and Information System (EOSDIS) Distributed Active Archive Centers</p>	p. S-20	<p>Mission data will be made fully available to the public in the minimum time necessary, and no longer than six months following its collection, barring exceptional circumstances.</p>



	<p>(DAACs), to be the data archive for the selected mission; proposals should not be tailored to one specific data center. Information on EOSDIS and the DAACs is available at <a href="https://earthdata.nasa.gov/about-eosdis/science-system-description/eosdis-components">https://earthdata.nasa.gov/about-eosdis/science-system-description/eosdis-components</a> <a href="https://earthdata.nasa.gov/about-eosdis/science-system-description/eosdis-components/eosdis-data-centers">https://earthdata.nasa.gov/about-eosdis/science-system-description/eosdis-components/eosdis-data-centers</a> and <a href="https://earthdata.nasa.gov/data/standards-and-references">https://earthdata.nasa.gov/data/standards-and-references</a>.</p> <p>Mission data will be made fully available to the public by the investigator team in usable form, in the minimum time necessary and, barring exceptional circumstances, within six months following its collection. The PI will be responsible for collecting the scientific, engineering, and ancillary information necessary to validate and calibrate the data prior to making it fully available. By no later than the investigation closeout, the investigation will deliver to the NASA-assigned data center all data products, along with the scientific algorithm software, coefficients, ancillary data used to generate these products, and the algorithm and calibration documentation.</p>		<p>The PI will be responsible for collecting the scientific, engineering, and ancillary information necessary to validate and calibrate the data. During Phase A, NASA will assign a data center, e.g., one of the Earth Observing System Data and Information System (EOSDIS) Distributed Active Archive Centers (DAACs), to be the data archive. Proposals should not be tailored to one specific DAAC. Throughout the investigation, the project will deliver all data products, along with the scientific algorithm software, coefficients, and ancillary data used to generate these products, and the algorithm and calibration documentation to the NASA-assigned DAAC as they are generated or updated. Information on EOSDIS and the DAACs is available at <a href="https://earthdata.nasa.gov/about/esdis-project">https://earthdata.nasa.gov/about/esdis-project</a> and <a href="https://earthdata.nasa.gov/about/daacs">https://earthdata.nasa.gov/about/daacs</a>.</p>
p. P-24	<ul style="list-style-type: none"> <li>Requirement 54 of the SALMON-2 AO limiting incurred costs to no more than 25% of proposed costs by Phase C is waived.</li> </ul>		<p>This text was deleted. Requirement 54 of the SALMON-2 AO applies to this PEA.</p>
	<p>This text supersedes the proposal's Heritage Appendix (proposal Appendix J.9) page limit as stated on the "Proposal Structure and Page Limits" table in page B-2 of the SALMON-2 AO.</p>	p. S-23	<ul style="list-style-type: none"> <li>The proposal's Heritage Appendix will be limited to 30 pages. This supersedes the proposal's Heritage Appendix (proposal Appendix J.9) page limit as stated on the "Proposal Structure and Page Limits" table in page B-2 of the SALMON-2 AO. Also, note that cost information in the heritage appendix is limited to a comparison of the cost of the heritage items to the proposed items' cost. Cost information for the proposed investigation is only permitted in Section H.</li> </ul>
p. P-24	<p>Requirement P-30. Traceability from science goals to measurement requirements to instrument functional and performance requirements and to top-level mission requirements shall be provided in tabular form and supported by narrative discussion. Instrument projected performance shall be compared to the instrument (or CubeSat) performance requirements.</p>	p. S-24	<p>Requirement S-30. Traceability from science goals to measurement requirements to instrument requirements (functional and performance) and to top-level mission requirements shall be provided in tabular form and supported by narrative discussion. Instrument projected performance shall be compared to the instrument (or CubeSat) performance requirements.</p>

p. P-25	<p><u>Requirement P-33.</u> This section shall describe any proposed new technologies and/or advanced engineering developments and the approaches that will be taken to reduce associated risks. Descriptions shall address, at a minimum, the following topics:</p> <ul style="list-style-type: none"> <li>• Identification and justification of the TRL for each proposed system (level 3 WBS payload developments and level 3 WBS spacecraft elements) incorporating new technology and/or advanced engineering development at the time the proposal is submitted (for <i>TRL definitions</i>, see NPR 7123.1B, <i>NASA Systems Engineering Processes and Requirements</i>, Appendix E, in the EVI-4 Library);</li> <li>• Rationale for combining the TRL values of components and subsystems to derive each full system TRL as proposed, appropriately considering TRL states of integration (see NASA/SP-2007-6105 Rev 1, <i>NASA Systems Engineering Handbook</i>);</li> <li>• Rationale for the stated TRL value of an element that is an adaptation of an existing element of known TRL;</li> <li>• The approach for maturing each of the proposed systems to a minimum of TRL 6 by PDR: <ul style="list-style-type: none"> <li>– Demonstration (testing) in a relevant environment can be accomplished at the system level or at lower level(s);</li> <li>– If applicable, justify what demonstration(s) in a relevant environment at lower level(s) (subsystem and/or subsystem-to-subsystem) would be sufficient to meet system level TRL 6, considering (i) where any new technology is to be inserted, (ii) the magnitude of engineering development to integrate elements, (iii) any inherent interdependencies between elements (e.g., critical alignments), and/or (iv) the complexity of interfaces – see the EVI-4 Library for examples;</li> <li>– Include discussion of simulations, prototyping, demonstration in a relevant environment, life testing, etc., as appropriate;</li> </ul> </li> <li>• An estimate of the resources (<b>manpower</b>, cost, and schedule) required to complete the technology and/or</li> </ul>	p. S-25	<p><u>Requirement S-33.</u> This section shall describe any proposed new technologies and/or advanced engineering developments and the approaches that will be taken to reduce associated risks. Descriptions shall address, at a minimum, the following topics:</p> <ul style="list-style-type: none"> <li>• Identification and justification of the TRL for each proposed system (level 3 WBS payload developments and level 3 WBS spacecraft elements) incorporating new technology and/or advanced engineering development at the time the proposal is submitted (for <i>TRL definitions</i>, see NPR 7123.1B, <i>NASA Systems Engineering Processes and Requirements</i>, Appendix E, in the EVI-4 Library);</li> <li>• Rationale for combining the TRL values of components and subsystems to derive each full system TRL as proposed, appropriately considering TRL states of integration (see NASA/SP-2007-6105 Rev 1, <i>NASA Systems Engineering Handbook</i>);</li> <li>• Rationale for the stated TRL value of an element that is an adaptation of an existing element of known TRL;</li> <li>• The approach for maturing each of the proposed systems to a minimum of TRL 6 by PDR: <ul style="list-style-type: none"> <li>– Demonstration (testing) in a relevant environment can be accomplished at the system level or at lower level(s);</li> <li>– If applicable, justify what demonstration(s) in a relevant environment at lower level(s) (subsystem and/or subsystem-to-subsystem) would be sufficient to meet system level TRL 6, considering (i) where any new technology is to be inserted, (ii) the magnitude of engineering development to integrate elements, (iii) any inherent interdependencies between elements (e.g., critical alignments), and/or (iv) the complexity of interfaces – see the EVI-4 Library for examples;</li> <li>– Include discussion of simulations, prototyping, demonstration in a relevant environment, life testing, etc., as appropriate;</li> </ul> </li> <li>• An estimate of the resources (<b>staffing</b>, cost, and schedule) required to complete the technology and/or advanced engineering development; and</li> <li>• Approaches to fallbacks/alternatives that exist and are planned, a description of the cost, decision date(s) for</li> </ul>

	<p>advanced engineering development; and</p> <ul style="list-style-type: none"> <li>Approaches to fallbacks/alternatives that exist and are planned, a description of the cost, decision date(s) for fallbacks/alternatives, relevant development schedules, and performance liens they impose on the baseline design, and the decision milestones for their implementation.</li> </ul> <p>If no new technologies or advanced engineering development is required, system TRL 6 or above at the time of proposal submission shall be clearly demonstrated.</p>		<p>fallbacks/alternatives, relevant development schedules, and performance liens they impose on the baseline design, and the decision milestones for their implementation.</p> <p>If no new technologies or advanced engineering development is required, system TRL 6 or above at the time of proposal submission shall be clearly demonstrated.</p>
	<p>Requirement S-34 supersedes Requirement B-57 of the SALMON-2 AO.</p>	p. S-26	<p>Requirement S-34 clarifies the intent of Requirement 89 and B-57 of the SALMON-2 AO. Requirement S-34 supersedes Requirement B-57 of the SALMON-2 AO.</p> <p>Requirement S-34. The following additional information is required to be supplied with the proposal as Appendices and, as such, will not be counted within the specified page limit. The proposer shall not include in these Appendices material required in the page-limited sections in the body of the proposal. Any additional information not specifically required in a given appendix will not be considered by the evaluation panel and may result in reduced ratings during the evaluation process or, in some cases, could lead to rejection of the proposal without review. No other appendices are permitted.</p>
p. P-26	<p>Requirement P-36. With the proposal submission via NSPIRES, the proposers shall identify any institution that is specified in the proposal but that does not appear in either the "Team Member" section (Section VI) of the cover page or in answer to the question about "participants [...] who do not appear on the proposal's cover page". The proposer shall list the institution and division name, role (e.g., solar array provider, instrument component provider), and estimated fixed year dollars to be received. This information will be used to avoid financial and organizational conflicts of interest during the evaluation process by checking evaluators against institutions that are proposed to supply materials, parts, or services.</p>	p. S-26	<p>Requirement S-37. With the proposal submission via NSPIRES, the proposers shall identify any institution that is specified in the proposal but that does not appear in either the "Team Member" section (Section VI) of the cover page or in answer to the question about "participants [...] who do not appear on the proposal's cover page". The proposer shall list the institution and division name, role (e.g., instrument component provider), and estimated funds to be received. This information will be used to avoid financial and organizational conflicts of interest during the evaluation process by checking evaluators against institutions that are proposed to supply materials, parts, or services.</p>
p. P-27	<p>As stated in Section 7.3 of the SALMON-2 AO, the Selection Official may take into account a wide range of</p>	p. S-28	<p>As stated in Section 7.3 of the SALMON-2 AO, the Selection Official may take into account a wide range of programmatic</p>



	<p>programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding and funding profiles, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the Mission Directorate(s). For an EVI proposal selection, these factors also include the likelihood that the proposed instrument can be accommodated on a NASA-selected platform in the near future. For an EVI CubeSat proposal selection, these factors also include that the appropriate launch services can be provided.</p>		<p>factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding and funding profiles, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the Mission Directorate(s). For an EVI <b>Instrument</b> proposal selection, these factors also include the likelihood that the proposed instrument can be accommodated on a NASA-selected platform in the near future. For an EVI CubeSat proposal selection, these factors also include <b>the likelihood</b> that the appropriate launch services can be provided.</p>
p. P-28	<p>The ESSP PO will authorize the release of funding to each selected investigation. <b>The initiation of the investigation's award of the contract will take place as soon as possible after notification of selection. In order for contracts to be awarded, Statements of Work (SOWs), updated cost and pricing data are required.</b> For reference, a SOW template is available in the EVI-3 Library. If more than one contractual arrangement between NASA and the proposing team is required, separate SOWs, updated cost, and pricing data are required for each contractual arrangement. NASA Centers will receive funding via intra-agency funding mechanisms.</p>	p. S-28	<p>The ESSP PO will authorize the release of funding to each selected investigation. <b>The initiation of the investigation will take place as soon as possible after notification of selection. Investigators are advised that Statements of Work (SOWs), updated cost and pricing data are required to initiate awards.</b> For reference, a SOW template is available in the EVI-4 Library. If more than one contractual arrangement between NASA and the proposing team is required, separate SOWs, updated cost, and pricing data are required for each contractual arrangement. NASA Centers will receive funding via intra-agency funding mechanisms.</p>
p. P-28	<p>SOWs will be required for selected investigations, regardless of whether a proposing organization is Governmental or non-Governmental. SOWs will include the following as a minimum: Scope of Work, Deliverables (including science data), and Government Responsibilities (as applicable). For contracts that exceed <b>\$700K</b>, the contractor will be required to provide cost and pricing data to support the cost estimate and to certify the cost proposed for the contract in accordance with FAR 15.403-4.</p>	p. S-28	<p>SOWs will be required for selected investigations, regardless of whether a proposing organization is Governmental or non-Governmental. SOWs will include the following as a minimum: Scope of Work, Deliverables (including science data), and Government Responsibilities (as applicable). For contracts that exceed <b>\$750K</b>, the contractor will be required to provide cost and pricing data to support the cost estimate and to certify the cost proposed for the contract in accordance with FAR 15.403-4.</p>